

04/21/99
JC618 U.S. PTO

Attorney's Docket No. Mellardo-1

PATENT APPLICATION TRANSMITTAL LETTER

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

JC618 U.S. PTO
09/29/92
04/21/99

Sir:

Transmitted herewith for filing is the patent application of

Inventor: J. Mellardo

For: A CABLES ARRESTER, IN COMBINATION WITH
AN ENERGIZED FLUID CONDUIT

Enclosed also are:

- (X) Specification and Claims
(X) 1 sheet(s) of informal drawings (2 extra copies)
() Form PTO-1595 for recording assignment of the invention to
ITT Manufacturing Enterprises, Inc.
(X) Combined Declaration and Power of Attorney
() Citation of Documents

CLAIMS AS FILED

FOR	NUMBER FILED	NUMBER EXTRA	RATE	BASIC FEE \$760.00
Total Claims	9 - 20 =	0	X \$18.00 =	\$ 0.00
Independent Claims	1 - 3 =	0	X \$78.00 =	0.00
Other				
TOTAL				\$ 760.00

(x) Please charge my Deposit Account No. 09-0949 in the amount of \$ 760.00
A duplicate copy of this sheet is enclosed.

(x) The Commissioner is hereby authorized to charge any additional
fees which may be required, or credit any overpayment to Account
No. 09-0949. A duplicate copy of this sheet is enclosed.

Please return the recorded assignment and address all communications
to:

Menotti J. Lombardi
ITT Fluid Technology
10 Mountainview Road - North
Upper Saddle River, New Jersey 07458

Respectfully,

Menotti J. Lombardi
Menotti J. Lombardi
Registration No. 24 009

Date: April 21, 1999

Telephone: (201) 760-5783

P11-0299

A CABLES ARRESTER, IN COMBINATION
WITH AN ENERGIZED FLUID CONDUIT

Background of the Invention

5 This invention pertains to submersible, axial flow pumps which are utilized for large volume, fluid handling in low lift applications. These pumps are used in many different environments, for example: water park rides at amusement parks. The pumps are mounted in large tubes or conduits through which the pumps convey the fluids up and out of the tubes or conduits. The pumps are self-contained, with the pump and motor therefor assembled as one unit. Accordingly, the electric power supply cables must be located in the pumped media to facilitate attachment to the motor-pump unit.

10 With the electric power supply cables arrayed in the flow path of the media, in the tube or conduit, they are susceptible to damage through the turbulence of the media. The latter can cause the cables to slap against each other, and abrade the cable coating and/or sheathing thereof, giving rise to the possibility of electrical shorting.

15 What has been needed is some practical means for supporting the cables, in such turbulent media, in an arrested, spaced-apart disposition, within the media-conveying tube or conduit.

It is an object of this invention, then, to set forth the needed means for arresting cables, securely spaced-apart from each other, within a media-pumped conduit.

20 Summary of the Invention

It is, particularly, an object of this invention to disclose a cables arrester, in combination with an energized-fluid conduit, comprising a conduit for the conduct of an energized fluid therethrough; a plurality of power cables confined within said conduit; and means removably fixed in said conduit for holding cables of said plurality thereof in spaced-apart disposition across said conduit.

25

Further objects of this invention, as well as the novel features thereof, will become apparent by reference to the following description, taken in conjunction with the accompanying figures.

Brief Description of the Figures

5 Figure 1 is a vertical, partly cross-sectioned illustration of a conduit for conducting an energized fluid, namely: water, therethrough, a lower portion of the conduit, having an axial flow pump disposed therein, is phantom, and an upper portion is cross-sectioned, and has a discharge pipe and a cables arrester, in accordance with an embodiment of the invention;

10 Figure 2 is substantially a line illustration, greatly enlarged over the scale of Figure 1, taken along section 2-2 of Figure 3, albeit with cabling, sheathing, and strain-relief devices included; and

15 Figure 3 is a perspective drawing of the support platform, platform brackets, and pipe couplers, for bridging across the conduit and receiving the cabling in spaced-apart disposition; here, the cabling, sheathing and strain-relief devices are omitted for clarity.

Detailed Description of the Preferred Embodiment

20 Figure 1 depicts a vertically disposed conduit 10 which is provided for a conduct of an energized fluid, namely: water in this embodiment of the invention, there-through from an entry 12 thereof, to a discharge outlet or discharge pipe 14 thereof. At the entry 12 of the conduit 10 is fastened (by means not shown) an axial flow pump 16 for impelling the water through the conduit 10 to the discharge pipe 14. The pump 16 is electrically powered and, accordingly, power-

25 ing and control cables need to be disposed in the water environment, within the conduit 10, for attachment to the pump in order that the pump 16 can operate. In Figure 1, sheathed cables 18 are depicted, the same reaching between the pump 16 and means 20. The latter means, according to the invention, comprises a cables arrester for holding cables and sheathed cables in a spaced-apart

30 disposition across the conduit 10.

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The means 20, the cables arrester, is shown in greater scale in Figures 2 and 3. Cable arrester means 20 comprises a channel-shaped platform 22 which is apertured to receive, in alignment with the apertures, internally-threaded pipe couplers 24 and 26. The platform 22 engages, at opposite ends thereof, wall brackets 28. As best seen in Figure 3, the brackets 28 have fasteners which removably fix the brackets 28 to opposite wall surfaces of the conduit 10, in order to establish the cables arrester 20 bridgingly across the conduit 10 in adjacency to the discharge pipe 14. Additional hardware removably fastens ends of the platform 22 to the brackets 28.

10 The discontinuous portion of illustration in Figure 2 comprises a cable 30 confined within a jacketing sheath 32. Portions of the sheath 32 are cut-away to show the inner cable 30. Ends of the sheath 32 terminate in externally -threaded pipe fittings 34. One of the fittings 34 threadedly engages an internally threaded, hollow stanchion 36 which is attachable to the pump 16 to lead cables, such as cable 30, into the pump 16.

The cables are sheathed to afford protection from any large objects which may be carried in the medium, the water, in the conduit 10.

20 Fittings 34 at the uppermost ends of each sheath 32 are threadedly engaged with the pipe couplers 24 and 26, and by this means, the sheathed cables 30 are held in spaced-apart disposition in the conduit 10. Secured by the pipe couplers and pipe fittings, the sheathed cables are capable of withstanding any tubulent fluid-flow conditions in the conduit 10.

25 Threadedly engaged with the pipe couplers 24 and 26, at the top of the cable arrester 20, are strain-relief devices 38 and 40. Devices 38 and 40 comprise grips which, when tightened about their respective cables, prevent the cables from slipping through the pipe couplers 24 and 26. Devices 38 and 40 are proprietary items marketed by Hubbell Inc., Bridgeport, Connecticut, and are sold under the trademark DELUXE CORD GRIP, out of the Kellems Division of Hubbell Inc., in Stonington, Connecticut. Exemplary ones bear a catalog
30 number 074-01-1030. The DELUXE CORD GRIP contains a rubber grommet (not shown) which seals around the subject cable for a water-tight fit.

Above the cables arrester 20, the cables 30 and 30' are led out of the conduit 10, as shown in Figure 1, via a closure cap 42; the latter securely clamps the exiting cables, the latter proceeding on to a power source and control circuitry (not shown). The energized water passes out of the discharge pipe 14

- 5 The invention accommodates for secure support of electrical cables in a turbulent fluid environment. It presents a substantially self-contained assembly with the sheathed power cables and the conduit bridging support bundled together as one unit. As can be appreciated, the aforesaid bridging support allows for the electrical power cables to be installed and removed all together with the
- 10 axial flow pump.

While I have described the invention in connection with a specific embodiment thereof, it is to be clearly understood that this is done only by way of example and not as a limitation to the scope of the invention, as set forth in the objects thereof, and in the appended claims.

I CLAIM:

1 1. A cables arrester, in combination with an energized-fluid conduit,
2 comprising:

3 a conduit for the conduct of an energized fluid therethrough;
4 a plurality of power cables confined within said conduit; and
5 means removably fixed in said conduit for holding cables of said
6 plurality thereof in spaced-apart disposition across said conduit.

1 2. A cables arrester, according to claim 1, wherein:
2 said means comprises means bridging across an intermediate portion of
3 said conduit.

1 3. A cables arrester, according to claim 2, wherein:
2 said bridging means comprises a platform, and conduit-engaging
3 supports for said platform.

1 4. A cables arrester, according to claim 2, wherein:
2 said bridging means comprises an apertured platform, threaded pipe
3 couplers in fixed alignment with apertures in said platform, and brackets for
4 removably fixing said platform across said conduit.

1 5. A cables arrester, according to claim 1, wherein:
2 said cables are jacketed with sheathing.

1 6. A cables arrester, according to claim 4, wherein:
2 said cables are jacketed with sheathing;
3 said sheathing terminates in threaded pipe fittings; and
4 said pipe fittings are threadedly engaged with said pipe couplers.

1 7. A cables arrester, according to claim 1, further including:
2 means engaged with said cables of said plurality thereof for strain
3 -relieving said cables.

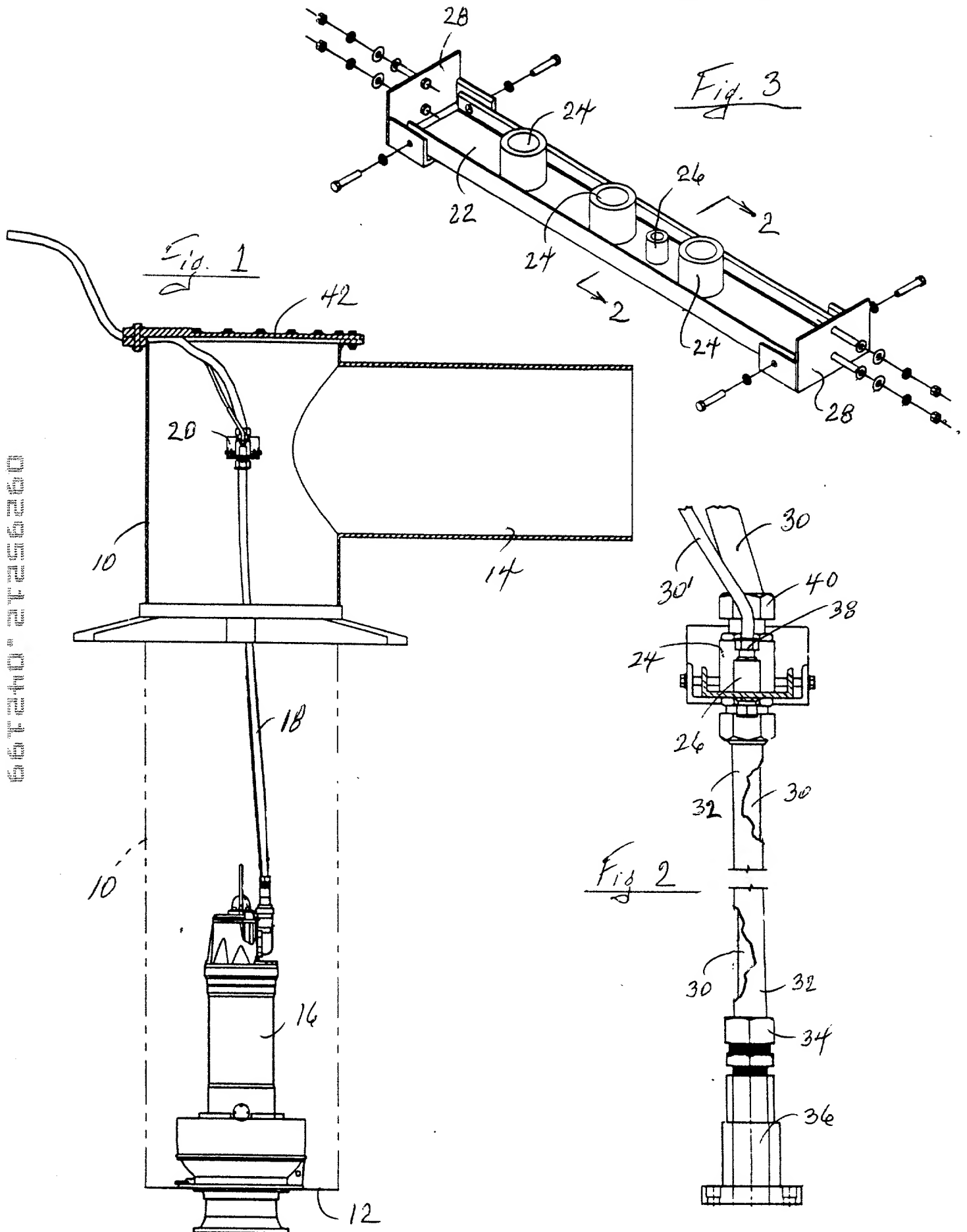
1 8. A cables arrester, according to claim 1, further including:
2 means for energizing fluid within said conduit; and wherein
3 said cables are coupled to said fluid energizing means.

1 9. A cables arrester, according to claim 5, further including:
2 an axial flow pump; and wherein
3 said sheathing terminates in threaded pipe fittings; and
4 said pump has a threaded pipe coupler in which threadedly to
5 receive a sheathing pipe fitting.

Abstract of the Disclosure

5 A platform, with end bracketing, is fastened
across an intermediate portion of an energized
-fluid conduit. The conduit conducts an ener-
gized fluid, namely: water, therethrough, and
the platform securely spaces apart electrical
power cabling which is confined in the conduit
for coupling with an axial flow pump, in a lower
portion of the conduit. By arrestingly spacing
10 apart the cabling, the possibility of the
cables, in the turbulent-flow environment in the
conduit, slapping against each other, and abrading
sheathing and/or insulation, is obviated. Hence,
any likelihood of electrical shorting is prevented.

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COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

A CABLES ARRESTER, IN COMBINATION WITH AN ENERGIZED FLUID CONDUIT

the specification of which (check one):

 X is attached hereto.

 was filed on as Application S/N .

 and was amended on (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information which is material to patentability as defined in Title 37, Code of Federal Regulations, Sec. 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Sec. 119 of any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
<u> </u> (Number)	<u> </u> (Country)	<u> </u> (Day/Month/Year Filed)	<u> </u> Yes	<u> </u> No
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

I hereby claim the benefit under Title 35, United States Code, Sec. 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, U.S. Code Sec. 112, I acknowledge the duty to disclose all information material to patentability as defined in Title 37, Code of Federal Regulations, Sec. 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

<u> </u> (Application Serial No.)	<u> </u> (Filing Date)	<u> </u> (Status: patented, pending, abandoned)
<u> </u> (Application Serial No.)	<u> </u> (Filing Date)	<u> </u> (Status: patented, pending, abandoned)

(continued)

COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: MENOTTI J. LOMBARDI, Reg. No. 24,009, ITT Fluid Technology, 10 Mountainview Road, Upper Saddle River, NJ 07458; and Robert P. Seitter, Reg. No. 24,856, 4 West Red Oak Lane, White Plains, NY 10604.

Address all telephone calls to Menotti J. Lombardi at (201) 760-5783.

Address all correspondence to Menotti J. Lombardi, ITT Fluid Technology, 10 Mountainview Road, Upper Saddle River, New Jersey 07458.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: **JOHN MELLARDO**

Inventor's Signature *John Mellardo*

4/1/99
Date

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Date

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Full name of third joint inventor, if any:

Third Inventor's Signature _____

Date

Residence _____

Citizenship _____

Post Office Address Same as residence

Full name of fourth joint inventor, if any:

Fourth Inventor's Signature _____

Date

Residence _____

Citizenship _____

Post Office Address Same as residence